DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-001086
Date Inspected: 20-Dec-2007

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 830
OSM Departure Time: 1730
Location: Shanghai, China

CWI Name:	See Below			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Tower Fabrication

Summary of Items Observed:

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Orthotropic Box Girder (OBG) and Tower Mock Up:

CWI Inspectors: Wang Nan, Sun Wei, M. K. Wu, Ye Yong Jun, Fu Juo Gang

Bay 3

The QA Inspector observed ZPMC welder Mr. Zi Zhaogian stencil 48810 using welding procedure specification WPS-345-FCAW-1G(1F)-Repair revision 1 to make a flux cored tack weld critical weld repair on OBG side plate weld SP047-01-018 with 1.4 mm diameter 71H welding electrodes. The QA Inspector observed a welding current of approximately 280 amps and 29 volts and the base material had been preheated to a minimum of 60° C. The QA Inspector asked ZPMC CWI Mr. Wang Nan if there is an approved critical weld repair document that authorizes completion of this work. Mr. Nan said the welding document is in the QC office at the far end of bay 3 and he will go get this document. Below is a photograph of Critical Weld Repair CWR# B-CWR11 document that Mr. Nan supplied that shows a Caltrans verbal approval on 12-19-2007. Items observed by the QA Inspector appear to comply with project specifications.

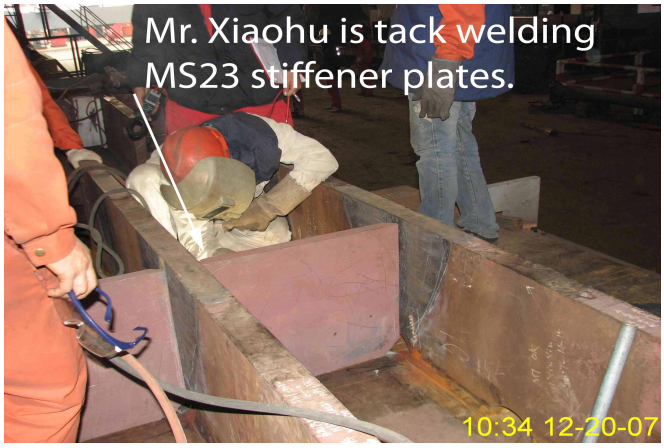
The QA Inspector observed ZPMC welder Mr. Jiang Xiaohu stencil 66155 is using welding procedure WPS-B-P-2312-TC-P4 to make shielded metal arc tack welds on OBG side plate 040 stiffener weld SP040-001-005 and weld SP040-001-006. The QA Inspector observed arc E7018 4.0 mm diameter electrodes and a welding current of approximately 180 amps and a minimum base material preheat temperature of 65° C. Items observed by the QA Inspector appear to comply with project specifications.

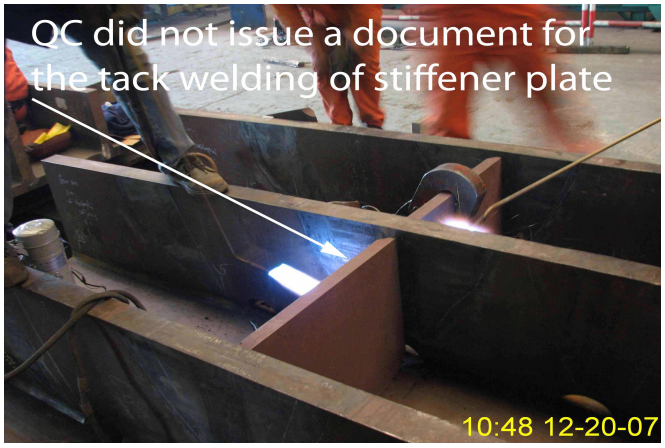
The QA Inspector observed ZPMC personnel perform flame straightening of plate 84A as directed by HSR1(B)064. The QA inspector observed Quality Control personnel monitoring the heat temperature using a laser indicating device, and the temperatures observed appear to comply with the requirements of the HSR listed above. No weights were used during this flame straightening.

The QA Inspector observed four ZPMC welders using welding procedure specification WPS-B-T-2132-2 to make flux cored fillet welds on OBG side plate 037 stiffener welds at the same time. ZPMC has multiple flux cored welding manipulators attached to a movable gantry that runs on a track that straddles the length of the stiffener plates. The QA Inspector observed a minimum base material preheat of 60° C, and a welding travel speed of approximately 450 mm per minute. As the welding commences, each of the welders is responsible for two of the flux cored welding heads. All welders are using 1.4 mm diameter E71T-1 electrodes that have been marked as being installed earlier today. Welder Mr. Lishu Gian stencil 48801 completed weld SP037-01-016 with a welding current of approximately 300 amps and 27.2 volts and weld SP037-01-017 with a welding current of approximately 285 amps and 27.6 volts. Welder Mr. Xin Meng stencil 53742 completed weld SP037-01-019 with a welding current of approximately 275 amps and 28.0 volts and weld SP037-01-020 with a welding current of approximately 290 amps and 28.2 volts. Welder Lisau Liang stencil 48810 completed weld SP037-01-023 with a welding current of approximately 300 amps and 27.5 volts and weld SP037-01-024 with a welding current of approximately 280 amps and 29.8 volts. Welder Dong Jinbao stencil 49775 completed weld SP037-01-027 with a welding current of approximately 295 amps and 28.0 volts and weld SP037-01-028 with a welding current of approximately 290 amps and 27.5 volts. Items observed by the QA Inspector appear to comply with project specifications.

Bay 2

The QA Inspector observed ZPMC welder Mr. Jiang Xiaohu stencil 66155 is using welding procedure WPS-B-T-4312-TC-4P-2 to make shielded metal partial penetration arc tack welds on M89 skin plate sub assembly face “C” between stiffener plate P924 and plate MP533. The QA Inspector observed E7018 4.0 mm diameter electrodes, a welding current of approximately 170 amps and a minimum base material preheat temperature of 110° C. The QA Inspector asked ZPMC QC CWI Inspector Mr. Li Liu Jang if he had recorded the welding procedure and applicable welding parameters on a welding inspection record for the work that was being performed and Mr. Jang said since these were tack welds that he did not need to issue a welding inspection report for this welding. Items observed by the QA Inspector do not appear to fully comply with project specifications due to QC not having a welding document for this a welding. See the photographs below showing Mr. Xiaohu tack welding this stiffener plate.





Summary of Conversations:

See above for summary of conversations.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer